

CLAIMS

What is claimed is:

1. A system for deposition of a material onto a substrate, the system comprising:
a laser source configured to emit a laser beam;
a target positioned so said laser beam is incident upon a first surface of said target;
and
a substrate positioned so that said target is disposed between said laser source and said substrate, said substrate receiving a vaporized portion of said target from another surface of said target upon said laser beam striking said target.
2. The system as recited in claim 1, wherein said target comprises a web and a target material deposited upon said web.
3. The system as recited in claim 1, wherein said another surface is in close proximity to said substrate.
4. The system as recited in claim 1, wherein said vaporized portion of said target is ejected from said another surface of said target opposite to said first surface.
5. The system as recited in claim 1, wherein said substrate is in contact with said another surface of said target.

6. The system as recited in claim 1, wherein said substrate is separated from said target by a distance of less than about 1 mm.

7. A system for deposition of a material onto a substrate, the system comprising:

a laser source configured to emit a laser beam;

a target comprising a first surface and a second surface disposed from said first surface, said first surface being positioned so as to be struck by said laser beam; and

a substrate positioned in close proximity to said second surface of said target so that said target is at least disposed between said laser source and said substrate, upon said target being struck by said laser beam, said substrate receives a vaporized portion of said target from said second surface of said target.
8. The system as recited in claim 7, wherein upon being incident upon said substrate, said vaporized portion of said target has a diameter smaller than a diameter of said laser beam.
9. The system as recited in claim 7, wherein said substrate is at least partially transparent to said laser beam.
10. The system as recited in claim 7, wherein said target comprises a web and a target material coupled to said web.
11. The system as recited in claim 10, wherein said web is at least partially transparent to said laser beam.

12. The system as recited in claim 1, further comprising a cassette adapted to carry said target.

13. The system as recited in claim 12, wherein said cassette comprises:

a web having a target material;

a pair of reels carrying said web; and

a housing supporting said target and said pair of reels.

14. The system as recited in claim 13, wherein said web extends from a first reel of said pair of reels to a second reel of said pair of reels.

15. The system as recited in claim 13, wherein said substrate is positioned less than 1mm from said target material.

16. The system as recited in claim 13, wherein said housing further comprises at least one window through which said laser beam passes.

17. A method for depositing a target material onto a substrate, the method comprising:
a step for directing a laser beam to a target comprising a target material; and
a step for ablating a portion of said target material through said target under the influence of said laser beam, wherein ablating said portion of said target material vaporizes said portion and directs said portion onto the substrate.
18. A method as recited in claim 17, further comprising a step for moving said target relative to the substrate.
19. A method as recited in claim 17, further comprising a step for creating a melting zone in said target, said melting zone propagating through said target.
20. A method as recited in claim 17, further comprising a step for creating an aperture in said target, said portion of said target material ejecting from said aperture toward the substrate.
21. A method as recited in claim 17, wherein said step for ablating comprises ablating a portion of said target so that a diameter of said portion incident upon said substrate is smaller than a diameter of said laser beam.

22. A method for depositing a target material onto a substrate, the method comprising:
a step for directing a laser beam to a target comprising a web and a target material deposited upon said web; and
a step for ablating a portion of said target material through said web under the influence of said laser beam, wherein ablating said portion of said target material vaporizes said portion and directs said portion onto the substrate.
23. The method of claim 22, wherein said laser beam is a pulsed ultraviolet laser beam originating from a laser source.
24. The method of claim 23, further comprising a step for creating a melting zone in said target material, said melting zone propagating through said target material.
25. The method of claim 22, further comprising a step for positioning the substrate to within 1mm of said target material.
26. The method of claim 22, further comprising a step for moving the substrate relative to said target material.
27. The method of claim 22, further comprising a step for moving the target material relative to the substrate.

28. The method of claim 27, wherein said step for moving said target material relative to the substrate comprises a step for moving said target material from a first reel of a cassette to a second reel of said cassette, said cassette comprising a housing supporting said first reel and said second reel.

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